

# ACTIVITY

**Fast, Faster, Fastest**

Nerve messages travel at incredible speeds. In fact, they can reach speeds of up to 100 meters per second. Nerve messages, however, are not the fastest things on Earth. Sound and light travel at speeds greater than the speed of a nerve impulse. To find out how fast sound and light travel, solve these riddles. If sound travels 3.3 times faster than a nerve impulse, how fast does sound travel? If light travels 30,000 times faster than a nerve impulse, how fast does light travel? Arrange these speeds from slowest to fastest.

## CALCULATING

**Figure 1-6** Notice how these human fat cells vary in size, depending on the amount of fat they are storing. Why is fat considered a type of connective tissue?



**MUSCLE TISSUE** The only kind of tissue in your body that has the ability to contract, or shorten, is muscle tissue. By contracting and thus pulling on bones, one type of muscle tissue makes your body move. Another type of muscle tissue lines the walls of structures inside your body. This muscle tissue does jobs such as moving food from your mouth to your stomach. A third type of muscle tissue is found only in the heart. This muscle tissue enables the heart to contract and pump blood.

**CONNECTIVE TISSUE** The tissue that provides support for your body and connects all its parts is called connective tissue. Bone is an example of connective tissue. Are you surprised to learn that bone is a tissue? Not all tissues need to be soft. Without bone, your body would lack support and definite shape. In other words, without bone you would just be a blob of flesh! Blood is another example of connective tissue. One of the blood's most important jobs is to bring food and oxygen to body cells and carry away wastes. A third kind of connective tissue is fat. Fat keeps the body warm, cushions structures from the shock of a sudden blow, and stores food.

**NERVE TISSUE** The third type of tissue is nerve tissue. Nerve tissue carries messages back and forth between the brain and spinal cord and every other part of your body. And it does so at incredible speeds. In the fraction of a second it takes for you to feel the cold of an ice cube you are touching, your nerve tissue has carried the message from your finger to your brain. Next time you have a chance to hold an ice cube, think about this.